

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

Requester's Full Name: David Simpson Examiner #: 7123 Date: 1/15
Art Unit: 212 Phone Number 301-7123 Serial Number: 11112345
Mail Box and Bldg/Room Location: 211 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order finished.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Method for Ranking Customer with Products

Inventors (please provide full names): David Simpson

Earliest Priority Filing Date: 1/15/2000

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

A method for ranking customer based on important features is [Push] with preferences

remote ordering of photo albums

remote printing and saving of photo albums

STAFF USE ONLY

Searcher: B. Lee AK-101

Searcher Phone #:

Searcher Location: 3000

Date Searcher Picked Up: 1/15/00

Date Completed: 1/19/00

Type of Search

NA Sequence (#)

AA Sequence (#)

Structure (#)

Bibliographic

Litigation

Fulltext

Vendors and cost where applicable

STN

Dialog

Questel/Orbit

Dr.Link

Lexis/Nexis

Sequence Systems

EIC 3600

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact*:

Karen Lehman, 306-5783

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* Example: 3610

➤ *Relevant prior art found, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

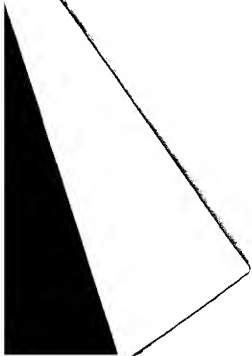
Examiner Singh:

Please find attached your search with Serial Number 09/508229.

Please let me know if you like for me to try a refocused search with a different strategy or additional terms.

Bode Akintola

Please take a few minutes to fill the attached Colored feedback form to the EIC.



| Set | Items | Description |
|-----|--------|--|
| S1 | 31578 | CLADDING? |
| S2 | 66893 | TUNNEL? OR CAVE? ? |
| S3 | 136104 | MESH? OR WELDMESH? |
| S4 | 301497 | CONCRETE? OR ROCK? ? OR STONE? ? |
| S5 | 86152 | WATERPROOF? OR WATERTIGHT? OR WATER() (PROOF? OR TIGHT?) |
| S6 | 925 | S1 AND S2 |
| S7 | 17 | S6 AND S3 |
| S8 | 738 | S1(15N)S2 |
| S9 | 225 | S8(15N)S4 |
| S10 | 12 | S9(20N)S5 |
| S11 | 6 | S9 AND S3 |
| S12 | 28 | S7 OR S10 OR S11 |

? show files

File 344:Chinese Patents Abs Aug 1985-2003/Jan

(c) 2003 European Patent Office

File 347:JAPIO Oct 1976-2002/Nov(Updated 030306)

(c) 2003 JPO & JAPIO

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200322

(c) 2003 Thomson Derwent

File 371:French Patents 1961-2002/BOPI 200209

(c) 2002 INPI. All rts. reserv.

12/5/1 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

014336189

WPI Acc No: 2002-156892/200221

Preformed mesh panel for use in cladding of roadway tunnels etc. -

NoAbstract

Patent Assignee: PERCIVALLI L (PERC-I)

Inventor: PERCIVALLI L

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| IT 1301446 | B | 20000613 | IT 98MI1246 | A | 19980603 | 200221 B |

Priority Applications (No Type Date): IT 98MI1246 A 19980603

Patent Details:

| Patent No | Kind | Lan Pg | Main IPC | Filing Notes |
|-----------|------|--------|----------|--------------|
|-----------|------|--------|----------|--------------|

| | | | | |
|------------|---|--|-------------|--|
| IT 1301446 | B | | E21D-000/00 | |
|------------|---|--|-------------|--|

Title Terms: PREFORM; **MESH** ; PANEL; CLAD; ROAD; **TUNNEL** ; NOABSTRACT

Derwent Class: Q49

International Patent Class (Main): E21D-000/00

File Segment: EngPI

12/5/2 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

013769051 **Image available**

WPI Acc No: 2001-253262/200126

XRPX Acc No: N01-181379

Length nut for constructing mesh array of rebars used in e.g. tunnel inner wall construction, is welded with tying support rod

Patent Assignee: FUJIMORI SANGYO KK (FUJI-N); MAEDA KENSETSU KOGYO KK (MAED-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|---------------|------|----------|-------------|------|----------|----------|
| JP 2001049796 | A | 20010220 | JP 99226268 | A | 19990810 | 200126 B |

Priority Applications (No Type Date): JP 99226268 A 19990810

Patent Details:

| Patent No | Kind | Lan Pg | Main IPC | Filing Notes |
|-----------|------|--------|----------|--------------|
|-----------|------|--------|----------|--------------|

| | | | | |
|---------------|---|--|---------------|--|
| JP 2001049796 | A | | 5 E04C-005/18 | |
|---------------|---|--|---------------|--|

Abstract (Basic): JP 2001049796 A

NOVELTY - A length nut (7) is clung with a tying support rod (23) through a weld (24). The length of the nut ranges between 30 and 100 millimeters. The length nut is screwed to one end of an outer reinforcement, when building a **mesh** array of rebars.

USE - For constructing **mesh** array of rebars used in **concrete** setting of secondary **cladding** layer in e.g. **tunnel** inner wall.

ADVANTAGE - Ensures accurate construction of rebar **mesh** array of certain design. Facilitates simple, reliable fine adjustment of installation position of each rebar in rebar **mesh** array. Facilitates simple construction of double rebar **mesh** array which requires less skilled labor.

DESCRIPTION OF DRAWING(S) - The figure shows the isometric view of a length nut.

Length nut (7)
Tying support rod (23)
Weld (24)
pp; 5 DwgNo 1/5
Title Terms: LENGTH; NUT; CONSTRUCTION; **MESH** ; ARRAY; **TUNNEL** ; INNER;
WALL; CONSTRUCTION; WELD; TIE; SUPPORT; ROD
Derwent Class: Q44; Q49; Q61
International Patent Class (Main): E04C-005/18
International Patent Class (Additional): E21D-011/10; F16B-037/00
File Segment: EngPI

12/5/3 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

013640782 **Image available**
WPI Acc No: 2001-124990/200114
XRPX Acc No: N01-091984

Sound absorbing wall panels for exterior use are covered with a stainless steel mesh with interior space and absorbing layer
Patent Assignee: LORKE W (LORK-I)
Number of Countries: 001 Number of Patents: 001
Patent Family:
Patent No Kind Date Applicat No Kind Date Week
DE 20016370 U1 20010118 DE 2000U2016370 U 20000921 200114 B

Priority Applications (No Type Date): DE 2000U2016370 U 20000921
Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
DE 20016370 U1 11 E04B-001/86

Abstract (Basic): DE 20016370 U1

NOVELTY - A sound absorbing wall panel has the outer surface protected by a stainless steel **mesh** of selected porosity and woven from round steel strands or rods to reduce the adhesion of dust and dirt. The panel has a selected internal space, to operate as a Helmholtz resonator for acoustic damping and includes a sound absorbing layer. The panel can be mounted directly onto a wall or is fitted to a support frame.

USE - Acoustic **cladding** for roadway, **tunnels** etc.

ADVANTAGE - Good sound damping and high resistance to corrosion

pp; 11 DwgNo 1/6

Title Terms: SOUND; ABSORB; WALL; PANEL; EXTERIOR; COVER; STAINLESS; STEEL;
MESH ; INTERIOR; SPACE; ABSORB; LAYER
Derwent Class: Q41; Q43
International Patent Class (Main): E04B-001/86
International Patent Class (Additional): E01F-008/00
File Segment: EngPI

12/5/4 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

013624180 **Image available**
WPI Acc No: 2001-108388/200112
XRPX Acc No: N01-080842

Waterproof structure for mountain tunnel, has injection hose fitted to hole in waterproof sheet for injecting filler material between inner

concrete layer and waterproof sheet

Patent Assignee: KFC KK (KFCCK-N)

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week | |
|---------------|------|----------|-------------|------|----------|--------|---|
| JP 2000337096 | A | 20001205 | JP 99147834 | A | 19990527 | 200112 | B |
| JP 3241344 | B2 | 20011225 | JP 99147834 | A | 19990527 | 200203 | |

Priority Applications (No Type Date): JP 99147834 A 19990527

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|---------------|------|-----|----|-------------|-------------------------------------|
| JP 2000337096 | A | | 7 | E21D-011/38 | |
| JP 3241344 | B2 | | 7 | E21D-011/38 | Previous Publ. patent JP 2000337096 |

Abstract (Basic): JP 2000337096 A

NOVELTY - **Waterproof** sheet (3) is laid on the inner surface of outer **cladding concrete** layer constructed to inner side of natural ground (1), in the **tunnel**. To the inner side of the **waterproof** sheet, inner **cladding concrete** layer is formed. Filler material is injected between the inner **concrete** layer and **waterproof** sheet, through the holes formed in the sheet. The holes are connected with filling hose.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the tunnel construction technique.

USE - For mountain tunnel.

ADVANTAGE - Has improved durability and waterproof property, as filler material is injected between the inner concrete layer and waterproof sheet.

DESCRIPTION OF DRAWING(S) - The figure shows the longitudinal cross-sectional view of waterproof tunnel.

Natural ground (1)

Waterproof sheet (3)

pp; 7 DwgNo 1/13

Title Terms: WATERPROOF; STRUCTURE; MOUNTAIN; TUNNEL; INJECTION; HOSE; FIT; HOLE; WATERPROOF; SHEET; INJECTION; FILL; MATERIAL; INNER; CONCRETE; LAYER; WATERPROOF; SHEET

Derwent Class: Q49

International Patent Class (Main): E21D-011/38

File Segment: EngPI

12/5/5 (Item 5 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

013245070 **Image available**

WPI Acc No: 2000-416952/200036

XRPX Acc No: N00-311558

Dividing jig for the manufacture of mesh used in e.g. inverting arched reinforced concrete used as a cladding material of the tunnel

Patent Assignee: TOPY JITSUGYO KK (TOPY-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week | |
|---------------|------|----------|-------------|------|----------|--------|---|
| JP 2000145389 | A | 20000526 | JP 98340970 | A | 19981113 | 200036 | B |

Priority Applications (No Type Date): JP 98340970 A 19981113

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|---------------|------|-----|----|-------------|--------------|
| JP 2000145389 | A | | 5 | E21D-011/10 | |

Abstract (Basic): JP 2000145389 A

NOVELTY - Positioning mechanisms are used when installing the distributing bars (3) across the main reinforcing bars (1) which are formed according to a curve portion of the **tunnel**. The main reinforcing bars and the distributing bars are arranged at predetermined intervals.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following: a jig for **mesh** manufacture; and a construction method for arched reinforced **concrete cladding** of the **tunnel**.

USE - For the manufacture of **mesh** used in e.g. inverting arched reinforced **concrete** used as a **cladding** material of the **tunnel**.

ADVANTAGE - Reduces labor and construction cost due to easy formation of a section which corresponds to a curve portion of the **tunnel**.

DESCRIPTION OF DRAWING(S) - The figure shows an isometric view of the finished **mesh**.

Main reinforcing bars (1)

Distributing bars (3)

pp; 5 DwgNo 1/5

Title Terms: DIVIDE; JIG; MANUFACTURE; **MESH**; INVERT; ARCH; REINFORCED;

CONCRETE; CLAD; MATERIAL; **TUNNEL**

Derwent Class: Q49

International Patent Class (Main): E21D-011/10

File Segment: EngPI

12/5/6 (Item 6 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

013127394 **Image available**

WPI Acc No: 2000-299265/200026

XRPX Acc No: N00-224750

Fixing tool for attaching waterproof sheet to natural ground surface or primary cladding concrete surface during waterproofing construction of tunnel

Patent Assignee: FUJIMORI IND CO LTD (FUJO)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|---------------|------|----------|-------------|------|---------|----------|
| JP 2000087700 | A | 20000328 | JP 98260752 | A | 1998091 | 200026 B |

Priority Applications (No Type Date): JP 98260752 A 19980916

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

JP 2000087700 A 5 E21D-011/38

Abstract (Basic): JP 2000087700 A

NOVELTY - A portion of a waterproof sheet is connected to a clamping protrusion (2a) of each hook and loop fastener (2) so that the waterproof sheet will be clamped. Each fastener is clung to natural ground or primary cladding concrete surface such that the protrusion is positioned at secondary cladding concrete side. The fasteners are attached to a strip (1) at predetermined intervals along the longitudinal direction.

USE - For attaching **waterproof** sheet to natural ground surface or primary **cladding concrete** surface during **waterproofing** construction of **tunnel**.

ADVANTAGE - Attains excellent working efficiency during fixation of

waterproof sheet in waterproofing construction of tunnel.

DESCRIPTION OF DRAWING(S) - The figure shows the plan view of a fixing tool.

Hook and loop fastener (2)

Clamping protrusion (2a)

pp; 5 DwgNo 1/4

Title Terms: FIX; TOOL; ATTACH; WATERPROOF; SHEET; NATURAL; GROUND; SURFACE
; PRIMARY; CLAD; CONCRETE; SURFACE; WATERPROOF; CONSTRUCTION; TUNNEL

Derwent Class: Q49

International Patent Class (Main): E21D-011/38

File Segment: EngPI

12/5/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

013100668 **Image available**

WPI Acc No: 2000-272539/200024

XRAM Acc No: C00-083310

Coated woven glass fiber netting material for plaster reinforcement by
passing through immersion bath of molten thermoplastic material and
blower followed by hot mangle station before cooling and winding

Patent Assignee: VITRULAN TEXTILGLAS GMBH (VITR-N)

Inventor: MOLL A

Number of Countries: 025 Number of Patents: 003

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-------------|------|----------|-------------|------|----------|----------|
| DE 19844387 | A1 | 20000330 | DE 1044387 | A | 19980928 | 200024 B |
| EP 990626 | A1 | 20000405 | EP 99112230 | A | 19990625 | 200024 |
| DE 19844387 | C2 | 20020307 | DE 1044387 | A | 19980928 | 200219 |

Priority Applications (No Type Date): DE 1044387 A 19980928

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-----------|------|-----|----|----------|--------------|
|-----------|------|-----|----|----------|--------------|

| | | | | | |
|-------------|----|--|---|-------------|--|
| DE 19844387 | A1 | | 6 | D06N-007/00 | |
|-------------|----|--|---|-------------|--|

| | | | | | |
|-----------|----|---|--|-------------|--|
| EP 990626 | A1 | G | | C03C-025/26 | |
|-----------|----|---|--|-------------|--|

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
LI LT LU LV MC MK NL PT RO SE SI

| | | | | | |
|-------------|----|--|--|-------------|--|
| DE 19844387 | C2 | | | D06N-007/00 | |
|-------------|----|--|--|-------------|--|

Abstract (Basic): DE 19844387 A1

NOVELTY - Coating a glass fiber netting with thermoplastic polymer comprises passing the netting through an immersion bath of molten thermoplastic material and then through a blower to clear the mesh openings followed by a hot mangle station before cooling and winding.

DETAILED DESCRIPTION - The netting is a woven fabric, with glass filaments in the warps and wefts as glass yarns or rovings, in a thickness of 22-2400 tex. The glass filaments can also contain other synthetic or carbon fibers. The plastics coating is applied at a rate of 10-30 wt% of the total weight, in a structure which can form a film over the woven netting as a reinforced film material. Sand can be bonded partially into the cladding. An INDEPENDENT CLAIM is included for a production process where the woven netting (1) is immersed in a bath (3) of molten thermoplastic cladding material (4), and mangled (6,7) while hot.

Preferred Features: The hot plastics cladding material can be applied from an extruder as a paste over the woven netting, with a scraper to remove any surplus cladding. The mesh openings can be cleared by an air blower (8), and preferably with hot air (9). The

plastics cladding can also be applied to the woven netting as a powder, such as by an electronic adhesion coating process, to be melted in a furnace shaft or a heated tunnel. The coated netting is passed through a cooling stretch (10). The glass fiber material can be cladded with a thermoplastics before weaving into the netting fabric, so that the glass fibers bond together when passed between heated rollers. The glass fiber filaments can be cladded with the thermoplastics material through an extruder. Hot sand is scattered over the surface of the finished and cladded woven netting material.

USE - The netting material is for the reinforcement of plaster, or as a geo textile material

ADVANTAGE - The coated woven netting material is produced rapidly and easily. The thickness of the plastics coating can be set for an effective protection against attack by alkali media.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic view of the production of cladded woven netting materials.

woven netting material (1)
immersion bath (3)
molten thermoplastic material (4)
mangle rollers (6,7)
blower station (8)
hot air streams (9)
cooling stretch (10)
pp; 6 DwgNo 1/6

Title Terms: COATING; WOVEN; GLASS; NET; MATERIAL; PLASTER; REINFORCED;
PASS; THROUGH; IMMERSE; BATH; MOLTEN; THERMOPLASTIC; MATERIAL; BLOW;
FOLLOW; HOT; MANGLE; STATION; COOLING; WIND

Derwent Class: A82; F08; P73; Q45

International Patent Class (Main): C03C-025/26; D06N-007/00

International Patent Class (Additional): B32B-017/04; D03D-015/00;
E04F-013/04

File Segment: CPI; EngPI

12/5/8 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

013061844 **Image available**

WPI Acc No: 2000-233712/200020

XRPX Acc No: N00-176386

Extension method for water proof sheet constructed in e.g. tunnel

Patent Assignee: FUJIMORI IND CO LTD (FUJO)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|---------------|------|----------|-------------|------|---------|----------|
| JP 2000054800 | A | 20000222 | JP 98225840 | A | 1998081 | 200020 B |

Priority Applications (No Type Date): JP 98225840 A 19980810

Patent Details:

| Patent No | Kind | Lan Pg | Main IPC | Filing Notes |
|---------------|------|--------|---------------|--------------|
| JP 2000054800 | A | | 5 E21D-011/38 | |

Abstract (Basic): JP 2000054800 A

NOVELTY - A tape (3) has its clinging portion (3b) vertically affixed to one side of an impermeable sheet body (2). Linguiform splits (4) are intermittently cut along the free edge of the tape, of which these splits are separated at predetermined intervals from each other.

USE - For water proof sheet constructed in e.g. tunnels.

ADVANTAGE - Water proof sheet can be reliably fixed to either to natural ground within tunnel or primary cladding concrete wall

surface. Prevents spring water from leaking from primary to secondary
cladding concrete sides of tunnel .

DESCRIPTION OF DRAWING(S) - The figure shows the plan view of the
water proof sheet.

Sheet body (2)

Tape (3)

Clinging portion (3b)

Linguiform splits (4)

pp; 5 DwgNo 1/4

Title Terms: EXTEND; METHOD; WATER; PROOF; SHEET; CONSTRUCTION; TUNNEL

Derwent Class: Q49

International Patent Class (Main): E21D-011/38

File Segment: EngPI

12/5/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

012725697 **Image available**

WPI Acc No: 1999-531810/199945

XRPX Acc No: N99-394530

Fixing member for waterproof sheet spread over e.g. natural ground,
primary cladding concrete surface of tunnel

Patent Assignee: FUJIMORI IND CO LTD (FUJO)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-------------|------|----------|-------------|------|----------|----------|
| JP 11229794 | A | 19990824 | JP 9854452 | A | 19980219 | 199945 B |

Priority Applications (No Type Date): JP 9854452 A 19980219

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-------------|------|-----|----|-------------|--------------|
| JP 11229794 | A | | | E21D-011/38 | |

Abstract (Basic): JP 11229794 A

NOVELTY - A hook and loop fastener (21) is provided at the
peripheral edge of the fixing member (11). Clamping protrusions are
formed at one side of the fixing member.

USE - For waterproof sheet spread over e.g. natural ground,
primary cladding concrete surface of tunnel .

ADVANTAGE - Improves fixing efficiency of waterproof sheet.
Improves strength of fixing member. Reduces manufacturing cost of
fixing member. Reduces waterproofing cost of tunnel.

DESCRIPTION OF DRAWING(S) - The figure shows the plan view of the
fixing member.

Fixing member (11)

Hook and loop fastener (21)

Title Terms: FIX; MEMBER; WATERPROOF; SHEET; SPREAD; NATURAL; GROUND;

PRIMARY; CLAD; CONCRETE; SURFACE; TUNNEL

Derwent Class: Q49

International Patent Class (Main): E21D-011/38

File Segment: EngPI

12/5/10 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

012634466 **Image available**

WPI Acc No: 1999-440570/199937

XRPX Acc No: N99-329092

Expandable joint structure for tunnel repairing - has L-shaped seal attaching frame, fixed to concrete segments by fixing stone bolts through frame holder and formwork attached to frame

Patent Assignee: SEIBU POLYMER SYNTHETIC CO (SEIU)

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-------------|------|----------|-------------|------|----------|----------|
| JP 11182187 | A | 19990706 | JP 97364064 | A | 19971217 | 199937 B |
| JP 3193683 | B2 | 20010730 | JP 97364064 | A | 19971217 | 200146 |

Priority Applications (No Type Date): JP 97364064 A 19971217

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-------------|------|-----|----|-------------|-----------------------------------|
| JP 11182187 | A | | 5 | E21D-011/04 | |
| JP 3193683 | B2 | | 5 | E21D-011/04 | Previous Publ. patent JP 11182187 |

Abstract (Basic): JP 11182187 A

NOVELTY - A L-shaped seal attaching frame (5) is installed between concrete segments (2,2') and a frame holder (8). Formwork boards (22) are inserted between the frame and formwork fixing element (19). The frame is fixed to the concrete segments with stone bolts (13). The formwork boards are fixed to the frame by inserting bolts (21) through fixing element. DETAILED DESCRIPTION - A space (4) is formed between inner peripheral surfaces (3a,3a') of **claddings** (3,3') provided on the **concrete** segments of coupling ends of **tunnels** (1,1'). The seal attaching frame is fixed between peripheral surfaces (2a,2a') of the **concrete** segments and a holder (8a) of the frame holder. The ends of a **water - tight** seal (5) are supported to the frames fixed to the concrete segments. The fixing element is installed at regular intervals on the frame.

USE - For joining tunnel segments during tunnel repairing.

ADVANTAGE - Prevents obstacles at tunnel joint, since coupling is at inner periphery side between claddings. Eliminates installation errors, as frame holder is supported to concrete segments by stone bolt. Offers flexibility, as formwork boards of different thickness can be used to existing cladding. DESCRIPTION OF DRAWING(S) - The figure shows the cross- sectional view of the tunnel expansion joint. (1,1') Tunnels; (2,2') Segments; (2a,2a') Peripheral surfaces; (3,3') Claddings; (3a,3a') Peripheral surfaces; (4) Space; (5) Seal attaching frame; (8a) Holder; (13) Stone bolt; (19) Fixing element; (21) Bolt; (22) Formwork board.

Dwg.1/5

Title Terms: EXPAND; JOINT; STRUCTURE; TUNNEL; REPAIR; SHAPE; SEAL; ATTACH; FRAME; FIX; CONCRETE; SEGMENT; FIX; STONE; BOLT; THROUGH; FRAME; HOLD; FORMWORK; ATTACH; FRAME

Derwent Class: Q42; Q49

International Patent Class (Main): E21D-011/04

International Patent Class (Additional): E03F-003/04

File Segment: EngPI

12/5/11 (Item 11 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

012319878 **Image available**

WPI Acc No: 1999-125984/199911

XRPX Acc No: N99-092173

Gable frame structure used for forming tunnel cladding body - has

metallic mesh , set inside end board, which is pushed by internal pressure of concrete, set in cladding formwork, to be set in gap between end of end board and inner peripheral surface of tunnel

Patent Assignee: SAGA KOGYO KK (SAGA-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-------------|------|----------|-------------|------|----------|----------|
| JP 11002099 | A | 19990106 | JP 97152419 | A | 19970610 | 199911 B |

Priority Applications (No Type Date): JP 97152419 A 19970610

Patent Details:

| Patent No | Kind | Lan Pg | Main IPC | Filing Notes |
|-------------|------|--------|-------------|--------------|
| JP 11002099 | A | 7 | E21D-011/10 | |

Abstract (Basic): JP 11002099 A

NOVELTY - A metallic **mesh** (19) is set inside an end board (18) that is attached to the curved state in the inner peripheral surface of a **tunnel** . The metallic **mesh** is pushed by the internal pressure of **concrete** set in a **cladding** formwork, such that its outer side is contacted to the inner peripheral surface of the **tunnel** and sets to a gap between the end of the end board and **tunnel** inner peripheral surface. DETAILED DESCRIPTION - The outer side of the end board is supported by a gable frame cylinder (17) that moves to the diametral direction in the **tunnel** . The **concrete** is set in the **cladding** formwork after the metallic **mesh** is set inside the end board. An INDEPENDENT CLAIM is also included for a **tunnel cladding** body formation method.

USE - Suitable for forming **tunnel cladding** body.

ADVANTAGE - Shortens construction time of **tunnel cladding** body. Ensures simple and reliable prevention of leakage of **concrete** from gap. DESCRIPTION OF DRAWING(S) - The figure shows the enlarged cross-section view of the gable frame structure. (17) gable frame cylinder; (18) end board; (19) metallic **mesh** .

Dwg.5/5

Title Terms: GABLE; FRAME; STRUCTURE; FORMING; **TUNNEL** ; CLAD; BODY; METALLIC; **MESH** ; SET; END; BOARD; PUSH; INTERNAL; PRESSURE; CONCRETE; SET; CLAD; FORMWORK; SET; GAP; END; END; BOARD; INNER; PERIPHERAL; SURFACE; **TUNNEL**

Derwent Class: Q49

International Patent Class (Main): E21D-011/10

File Segment: EngPI

12/5/12 (Item 12 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

012046994 **Image available**

WPI Acc No: 1998-463904/199840

XRPX Acc No: N98-362175

Sheet waterproofing material construction method for excavation surface of tunnel - involves fixing backing buffer material to primary cladding concrete surface of tunnel with shut waterproofing material by implanting tanks to tack receiving board

Patent Assignee: BRIDGESTONE CORP (BRID)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-------------|------|----------|-------------|------|----------|----------|
| JP 10196294 | A | 19980728 | JP 96358096 | A | 19961231 | 199840 B |

Priority Applications (No Type Date): JP 96358096 A 19961231

Patent Details:

| | | | | | |
|-------------|------|-----|----|-------------|--------------|
| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
| JP 10196294 | A | | 5 | E21D-011/38 | |

Abstract (Basic): JP 10196294 A

The method involves extending a backing buffer material (11) such as unwoven cloth to the surface of primary cladding concrete (b) formed on the surface of excavation natural ground (a) inside the tunnel. A long plastic tack receiving board (A) formed with several hook shaped protrusions on one side is fixed to the backing buffer material.

The receiving board is provided such that the hook shaped protrusions are pierced into the backing buffer material. The backing buffer material is extended to the primary cladding concrete surface with a sheet water proofing material (B) formed with a waterproof sheet by implanting tacks to the tack receiving board.

ADVANTAGE - Integrates sheet water proofing material to backing buffer material by lamination before construction. Facilitates extension spreading of sheet water proofing material within range of primary cladding concrete surface. Prevents damaging of primary cladding concrete surface or waterproof sheet. Obtains high practical value.

Dwg.3/6

Title Terms: SHEET; WATERPROOF; MATERIAL; CONSTRUCTION; METHOD; EXCAVATE; SURFACE; TUNNEL; FIX; BACKING; BUFFER; MATERIAL; PRIMARY; CLAD; CONCRETE; SURFACE; TUNNEL; SHUT; WATERPROOF; MATERIAL; IMPLANT; TANK; TACK; RECEIVE ; BOARD

Derwent Class: Q49

International Patent Class (Main): E21D-011/38

File Segment: EngPI

12/5/13 (Item 13 from file: 350)

DIALOG(R) File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

011864014 **Image available**

WPI Acc No: 1998-280924/199825

XRPX Acc No: N98-221463

Waterproofing sheet arranged between primary and secondary concrete cladding of constructed tunnel - has minimum of one end sheet, bonded to adhesive joint formed between ends of gap forming sheet and impermeable sheet, which is bonded to embedding sheet suspended from primary concrete cladding of tunnel

Patent Assignee: FUJIMORI IND CO LTD (FUJO)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-------------|------|----------|-------------|------|----------|----------|
| JP 10096399 | A | 19980414 | JP 96272944 | A | 19960924 | 199825 B |

Priority Applications (No Type Date): JP 96272944 A 19960924

Patent Details:

| | | | | | |
|-------------|------|-----|----|-------------|--------------|
| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
| JP 10096399 | A | | 6 | E21D-011/38 | |

Abstract (Basic): JP 10096399 A

The sheet (1) has a gap forming sheet (4) bonded on the surface of an impermeable sheet (5), in which the ends (4a,4b) of the gap forming sheet are free from the ends (5a,5b) of the impermeable sheet. At least one end sheet (6) is bonded to an adhesive joint (5c) formed between the ends of the gap forming sheet and the impermeable sheet.

During attachment, the end sheet is bonded to an embedding sheet (9) and the impermeable sheet ends are bonded together. The embedding sheet is suspended from the primary concrete cladding (8) of a constructed tunnel. The gap forming sheet has an abutting side (4a) that abuts the surface of the primary concrete cladding.

ADVANTAGE - Simplifies forming of gap between primary and secondary concrete cladding of constructed tunnel, thereby enabling forming of pressure boundary section that allows relieving hydraulic pressure from concrete claddings. Allows maintaining gap for long period of time.

Dwg.3/8

Title Terms: WATERPROOF; SHEET; ARRANGE; PRIMARY; SECONDARY; CONCRETE; CLAD
; CONSTRUCTION; TUNNEL; MINIMUM; ONE; END; SHEET; BOND; ADHESIVE; JOINT;
FORMING; END; GAP; FORMING; SHEET; IMPERMEABLE; SHEET; BOND; EMBED; SHEET
; SUSPENSION; PRIMARY; CONCRETE; CLAD; TUNNEL

Derwent Class: Q49

International Patent Class (Main): E21D-011/38

File Segment: EngPI

12/5/14 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

011545953 **Image available**

WPI Acc No: 1997-522434/199748

XRPX Acc No: N97-435107

Primary cladding method for tunnel construction - by applying pressure towards tunnel wall after concrete injection and pressing waterproof sheet to surface of concrete

Patent Assignee: KFC KK (KFCCK-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| JP 9250297 | A | 19970922 | JP 9660648 | A | 19960318 | 199748 B |

Priority Applications (No Type Date): JP 9660648 A 19960318

Patent Details:

| Patent No | Kind | Lan Pg | Main IPC | Filing Notes |
|------------|------|--------|---------------|--------------|
| JP 9250297 | A | | 6 E21D-011/10 | |

Abstract (Basic): JP 9250297 A

The method involves forming a primary cladding sets space (53) by setting a waterproof sheet (52), using a formwork (53) in the natural ground of a tunnel wall (51a).

A concrete mixture is then injected rapidly through a nozzle (55) into the primary cladding set space and the **waterproof** sheet is set by the movement of the formwork. Pressure is applied in the direction of the **tunnel** wall until a primary **cladding concrete** (56) is set.

ADVANTAGE - Facilitates primary cladding and waterproofing together. Improves efficiency of tunnel cladding.

Dwg.1/5

Title Terms: PRIMARY; CLAD; METHOD; TUNNEL; CONSTRUCTION; APPLY; PRESSURE;
TUNNEL; WALL; AFTER; CONCRETE; INJECTION; PRESS; WATERPROOF; SHEET;
SURFACE; CONCRETE

Index Terms/Additional Words: NATM

Derwent Class: Q49

International Patent Class (Main): E21D-011/10

File Segment: EngPI

12/5/15 (Item 15 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

011433203 **Image available**
WPI Acc No: 1997-411110/199738
XRPX Acc No: N97-342306

Crack generating joint for concrete wall structure in e.g. cladding body, boxed culvert, retaining wall, slab, tunnel wall - has sponge, filled on cutting groove formed on concrete, and has low water permeability so that water can not easily leak and lead to paste adhered on cutting groove

Patent Assignee: OHBAYASHI GUMI KK (OHBA)
Number of Countries: 001 Number of Patents: 001
Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| JP 9184206 | A | 19970715 | JP 95344006 | A | 19951228 | 199738 B |

Priority Applications (No Type Date): JP 95344006 A 19951228

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|------------|------|-----|----|----------|--------------|
| JP 9184206 | A | | 5 | | |

Abstract (Basic): JP 9184206 A

The joint (14) has a sponge (15) filled on the cutting groove (13) formed on the surface of a concrete wall. A perforated pipe (16) penetrates the sponge and runs along the length of the cutting groove. The sponge has low water permeability which is enough to prevent water from leaking to the paste (19) put on the groove. A hardening agent (21) is injected to the sponge to harden it after it cracks.

ADVANTAGE - Prevents water leak. Easily repaired by applying hardening agent on crack section of joint after installing it with perforated or mesh pipe.

Dwg.1/2

Title Terms: CRACK; GENERATE; JOINT; CONCRETE; WALL; STRUCTURE; CLAD; BODY; BOX; CULVERT; RETAIN; WALL; SLAB; TUNNEL ; WALL; SPONGE; FILLED; CUT; GROOVE; FORMING; CONCRETE; LOW; WATER; PERMEABLE; SO; WATER; CAN; EASY; LEAK; LEAD; PASTE; ADHERE; CUT; GROOVE

Derwent Class: Q43; Q46

International Patent Class (Main): E04B-001/62

International Patent Class (Additional): E04G-023/02

File Segment: EngPI

12/5/16 (Item 16 from file: 350)

DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

011138524 **Image available**
WPI Acc No: 1997-116448/199711
XRPX Acc No: N97-096139

Hanging metal fixture for second cladding of reinforced concrete in tunnel construction - has ring fitted fixing operation rod in closed position by which hinge side pieces are clamped by base metal

Patent Assignee: TOYO BUSSAN KK (TOXL)
Number of Countries: 001 Number of Patents: 001
Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| JP 9004394 | A | 19970107 | JP 95176726 | A | 19950620 | 199711 B |

Priority Applications (No Type Date): JP 95176726 A 19950620

Patent Details:
Patent No Kind Lan Pg Main IPC Filing Notes
JP 9004394 A 3 E21D-011/10

Abstract (Basic): JP 9004394 A

The metal fixture consists of a base metal part (1) of a C- shaped cross-section, supported by a supporter (6) fixed onto a primary cladding (5) of the tunnel surface. The base metal part forms a couple of clamping parts (11), on both the sides like angle boards. A hinge type clamping member (2) with a couple of hinge sides (22,23) is provided. A couple of operation rods (24,25) are installed for the opening/closing operation of the hinge sides.

The hinge sides are clamped in the clamping part with a water-proof sheet (4). The operation rods insert the hinge type clamping member into the base metal part by opening the hinge sides. The operation rods are moved in closing direction extracting the roots of the hinge sides squarely. A ring (3) is fitted over the couple of operation rods, fixing the operation rods in closed portion.

ADVANTAGE - Prevents hole forming while forming secondary cladding of **ferroconcrete** . Enables to install metal fixture easily on primary **cladding** . Achieves extremely satisfying **water - proofing of tunnel**

Dwg.2/2
Title Terms: HANG; METAL; FIX; SECOND; CLAD; REINFORCED; CONCRETE; TUNNEL; CONSTRUCTION; RING; FIT; FIX; OPERATE; ROD; CLOSE; POSITION; HINGE; SIDE; PIECE; CLAMP; BASE; METAL
Derwent Class: Q49
International Patent Class (Main): E21D-011/10
International Patent Class (Additional): E21D-011/38
File Segment: EngPI

12/5/17 (Item 17 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

011006886 **Image available**
WPI Acc No: 1996-503836/199650
XRPX Acc No: N96-424594

Excavator in arch shaped shield machine for arch type tunnel construction - has worm gear engaged with splined cylindrical axle, which rotates peripheral spline gear of deceleration driving mechanism

Patent Assignee: KAWASAKI HEAVY IND LTD (KAWJ); KUMAGI GUMI CO LTD (KUMG); MAEDA KENSETSU KOGYO KK (MAED-N); OKUMURA CORP (OKUM-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| JP 8260886 | A | 19961008 | JP 93339544 | A | 19931203 | 199650 B |

Priority Applications (No Type Date): JP 93339544 A 19931203

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes
JP 8260886 A 6 E21D-009/08

Abstract (Basic): JP 8260886 A

The excavator (3) consists of an excavation truck unit (6) which runs in an arch type skin plate (2). The excavation truck unit is provided with an angle variable box (12). A couple of parallel rotating shafts individually supports a couple of digging cutters (4, 5). The rotating shafts are driven by a drive shaft (11) by the power transmission mechanism in the angle variable box.

A hydraulic motor (14) rotates the drive shaft. A splined cylindrical axle (15) is installed on the rotation centre in the angle variable box. The splines of the cylindrical axle engages a worm gear. The worm gear meshes with the peripheral splined gear of a deceleration driving machine and rotates.

ADVANTAGE - Enables setting-in of primary **cladding** concrete in cavity part. Expels excavation waste rearwards with screw conveyor. Rotates main drive shaft with spline cylindrical axis concentric with angle variable box. Enables to move inner peripheral part of skin plate closed to digging periphery of cutter head. Enables to excavate arch type **tunnel** with enlarged outer periphery. Returns cutter heads in parallel state in skin plates. Facilitates injection of concrete between skin plate and excavated natural ground for **cladding**. Enables primary **cladding** without formwork.

Dwg.1/5

Title Terms: EXCAVATE; ARCH; SHAPE; SHIELD; MACHINE; ARCH; TYPE; **TUNNEL** ;
CONSTRUCTION; WORM; GEAR; ENGAGE; SPLINE; CYLINDER; AXLE; ROTATING;
PERIPHERAL; SPLINE; GEAR; DECELERATE; DRIVE; MECHANISM

Derwent Class: Q49

International Patent Class (Main): E21D-009/08

International Patent Class (Additional): E21D-011/10

File Segment: EngPI

12/5/18 (Item 18 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

010803722

WPI Acc No: 1996-300675/199630

XRAM Acc No: C96-095630

Self-adhesion reinforcement for nonwoven textile, useful in cars -

consists of laminated strip or fibre of high temp.-resistant material and low m.pt. plastics material binding reinforcement and textile fibres

Patent Assignee: HP-CHEM PELZER RES & DEV LTD (HPCH-N); HP CHEM PELZER RES & DEV LTD (HPCH-N); HP-CHEM RES & DEV LTD (HPCH-N)

Inventor: PELZER H

Number of Countries: 064 Number of Patents: 014

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-------------|------|----------|-------------|------|----------|----------|
| WO 9618763 | A1 | 19960620 | WO 95EP4930 | A | 19951213 | 199630 B |
| DE 4444505 | A1 | 19960620 | DE 4444505 | A | 19941214 | 199630 |
| AU 9643444 | A | 19960703 | AU 9643444 | A | 19951213 | 199642 |
| DE 4447713 | A1 | 19970717 | DE 4444505 | A | 19941214 | 199734 |
| | | | DE 4447713 | A | 19941214 | |
| EP 797697 | A1 | 19971001 | EP 95942144 | A | 19951213 | 199744 |
| | | | WO 95EP4930 | A | 19951213 | |
| BR 9510033 | A | 19971028 | BR 9510033 | A | 19951213 | 199750 |
| | | | WO 95EP4930 | A | 19951213 | |
| DE 4444505 | C2 | 19980219 | DE 4444505 | A | 19941214 | 199811 |
| CZ 9701780 | A3 | 19980916 | WO 95EP4930 | A | 19951213 | 199843 |
| | | | CZ 971780 | A | 19951213 | |
| KR 98700478 | A | 19980330 | WO 95EP4930 | A | 19951213 | 199901 |
| | | | KR 97704020 | A | 19970614 | |
| US 5922626 | A | 19990713 | WO 95EP4930 | A | 19951213 | 199934 |
| | | | US 97874039 | A | 19970612 | |
| MX 9704355 | A1 | 19980301 | MX 974355 | A | 19970612 | 200002 |
| EP 797697 | B1 | 20000308 | EP 95942144 | A | 19951213 | 200017 |
| | | | WO 95EP4930 | A | 19951213 | |
| DE 59507972 | G | 20000413 | DE 507972 | A | 19951213 | 200025 |

EP 95942144 A 19951213
 WO 95EP4930 A 19951213
 ES 2145942 T3 20000716 EP 95942144 A 19951213 200039

Priority Applications (No Type Date): DE 4444505 A 19941214; DE 4447713 A 19941214

Cited Patents: EP 310200; EP 584445; US 4766029; WO 9323596

Patent Details:

| Patent No | Kind | Ln | Pg | Main IPC | Filing Notes |
|---|------|----|----|-------------|--------------------------------|
| WO 9618763 | A1 | G | 18 | D04H-013/00 | |
| Designated States (National): AL AM AU BB BG BR BY CA CN CZ FI GE HU JP KG KP KR KZ LK LR LS LT LV MD MG MK MN MX NO NZ PL RO RU SD SG SI SK TJ TT UA UG US UZ VN | | | | | |
| Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG | | | | | |
| DE 4444505 | A1 | | 5 | D01F-008/04 | |
| AU 9643444 | A | | | D04H-013/00 | Based on patent WO 9618763 |
| DE 4447713 | A1 | | | D04H-013/00 | Div ex application DE 4444505 |
| | | | | | Div ex patent DE 4444505 |
| EP 797697 | A1 | G | | D04H-013/00 | Based on patent WO 9618763 |
| Designated States (Regional): BE DE ES FR GB NL PT SE | | | | | |
| BR 9510033 | A | | | D04H-013/00 | Based on patent WO 9618763 |
| DE 4444505 | C2 | | 4 | D01F-008/04 | Div in patent DE 4447713 |
| CZ 9701780 | A3 | | | D04H-013/00 | Based on patent WO 9618763 |
| KR 98700478 | A | | | D04H-013/00 | Based on patent WO 9618763 |
| US 5922626 | A | | | B32B-027/28 | CIP of application WO 95EP4930 |
| MX 9704355 | A1 | | | D04H-013/00 | |
| EP 797697 | B1 | G | | D04H-013/00 | Based on patent WO 9618763 |
| Designated States (Regional): BE DE ES FR GB NL PT SE | | | | | |
| DE 59507972 | G | | | D04H-013/00 | Based on patent EP 797697 |
| | | | | | Based on patent WO 9618763 |
| | | | | | Based on patent EP 797697 |
| ES 2145942 | T3 | | | D04H-013/00 | |

Abstract (Basic): WO 9618763 A

Self-adhesive reinforcing strip or fibre with binder properties for non-woven textiles consists of a laminate of 2 or more extruded layers of plastics high temp.-resistant material(s) (I) and low m.pt. plastics material(s) (II).

Also claimed are methods of making the material and nonwoven textiles contg. this reinforcement; and the reinforced nonwoven textiles per se.

Pref. (I) is PET, PBT, polyamide or highly crosslinked polyolefin, eg.. polyethylene and/or polypropylene. It has a m.pt. at least 50, esp. at least 100deg.C higher than that of (II). (II) is thermoplastic and esp. as HDPE, LDPE, polypropylene, polystyrene, PMMA, EVA, styrene/acrylonitrile, copolymers of these or copolymers of polyamides and polyesters.

USE - The reinforcement is used for making nonwoven textiles, esp. materials reinforced with glass fibres or glass mesh and nonwoven cotton textiles; and the reinforced textiles are used for making mouldings for use in cars, esp. acoustic damping in the region of the bonnet, back wall (both sides), tunnel, doors, roof, foot well, pumps, A- to D-columns and air channels and as opt. self-supporting base for internal cladding, esp. on fittings, tunnel, doors, backrests, A- to D-columns and spare wheel, and as pts. with a dual function, esp. roof lining, top cover, filler, boot mat or wheel arch cladding (all claimed).

ADVANTAGE - (I) acts as reinforcement, whilst (II) as binder and ensures a good bond between the textile fibres and (I).

Dwg.0/0

Title Terms: SELF; ADHESIVE; REINFORCED; NONWOVEN; TEXTILE; USEFUL; CAR; CONSIST; LAMINATE; STRIP; FIBRE; HIGH; TEMPERATURE; RESISTANCE; MATERIAL;

LOW; PLASTICS; MATERIAL; BIND; REINFORCED; TEXTILE; FIBRE
 Derwent Class: A95; F04; P27; P73; Q13; Q17; Q22
 International Patent Class (Main): B32B-027/28; D01F-008/04; D04H-013/00
 International Patent Class (Additional): A47G-027/00; B29C-047/30;
 B29C-069/00; B32B-027/08; B32B-031/18; B32B-031/30; B60K-037/00;
 B60R-007/10; B60R-013/01; B60R-013/02; B60R-013/08; B62D-025/16;
 C08L-023/02; C08L-025/06; C08L-033/10; C08L-077/00; D04H-001/00;
 D04H-001/42; D04H-001/54; D04H-001/56
 File Segment: CPI; EngPI

12/5/19 (Item 19 from file: 350)
 DIALOG(R) File 350:Derwent WPIX
 (c) 2003 Thomson Derwent. All rts. reserv.

008743652 **Image available**
 WPI Acc No: 1991-247668/199134
 XRAM Acc No: C91-107440
 XRPX Acc No: N91-188869

Compsn. and spray gun for forming ferro-element - with reduced mist formation due to rebound
 Patent Assignee: MONK CONSTR LTD (MONK-N); MONK CONSTRUCTION (MONK-N);
 HALLGARTH CONSTR LTD (HALL-N)
 Inventor: VENN A B
 Number of Countries: 036 Number of Patents: 009
 Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| GB 2240974 | A | 19910821 | GB 912879 | A | 19910212 | 199134 B |
| WO 9112215 | A | 19910822 | | | | 199136 |
| AU 9172195 | A | 19910903 | | | | 199148 |
| EP 515430 | A1 | 19921202 | EP 91903431 | A | 19910212 | 199249 |
| | | | WO 91GB208 | A | 19910212 | |
| NZ 238299 | A | 19940325 | NZ 238299 | A | 19910529 | 199426 N |
| GB 2240974 | B | 19941019 | GB 912879 | A | 19910212 | 199439 |
| US 5358751 | A | 19941025 | US 92916867 | A | 19920811 | 199442 |
| WO 9112215 | A3 | 19911226 | WO 91GB208 | A | 19910212 | 199509 |
| AU 659082 | B | 19950511 | AU 9172195 | A | 19910212 | 199527 |

Priority Applications (No Type Date): GB 903125 A 19900212; GB 903086 A 19900212; GB 912879 A 19910212; NZ 238299 A 19910529
 Cited Patents: No-SR.Pub; NoSR.Pub; 7.Jnl.Ref; EP 152016; FR 1084181; FR 1203437; FR 2228364; FR 2302789; FR 2594053; FR 960857; GB 1489604; JP 1051351; JP 50003114; JP 59156946; JP 61227960; US 2555238; US 3042316; US 3708124; US 4046357

Patent Details:
 Patent No Kind Lan Pg Main IPC Filing Notes
 WO 9112215 A
 Designated States (National): AU BB BG BR CA FI HU JP KP KR LK MC MG MW NO PL RO SD SU US
 Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LU NL OA SE
 EP 515430 A1 E 18 C04B-028/02 Based on patent WO 9112215
 Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL SE
 US 5358751 A 7 B05D-001/02
 AU 659082 B B28B-001/32 Previous Publ. patent AU 9172195
 Based on patent WO 9112215
 NZ 238299 A C04B-028/18
 GB 2240974 B E04G-021/00
 Abstract (Basic): GB 2240974 A

An aq. cementitious compsn. for prodn. of ferro cement objects by spraying comprises 15-25 pts. wt. silica sand and 3-4 pts. wt. water per 10 pts. cement powder. Pref. the sand has a crystalline quartz

content of at least 85 wt. % The compsn. may also include fly ash and/or minor amts. of additives such as Cr2O3.

A ferrocement object is prepd. by forming a layer of steel wire **mesh** over a backing layer and spraying a first layer of the above compsn. The latter is worked with the **mesh** and allowed to partially dry before at least one more layer is sprayed, each being allowed to partially dry before the **mesh** is applied. Each layer subsequent to the first is worked over.

USE/ADVANTAGE - Prodn. of preformed sections, lining, panels, boat hulls or precast invert sections; lining water courses or sewers; **cladding** or recladding buildings or structures esp. railway arches or **tunnels** . (all claimed). Formation of **mesh** of wet cement during spraying due to rebound is minimised.

Dwg.1/1

Title Terms: COMPOSITION; SPRAY; GUN; FORMING; FERRO; ELEMENT; REDUCE; MIST ; FORMATION; REBOUND

Derwent Class: L02; P42; P56; P64; Q24; Q42; Q43; Q44; Q46; Q67

International Patent Class (Main): B05D-001/02; B28B-001/32; C04B-028/02; C04B-028/18; E04G-021/00

International Patent Class (Additional): B05B-007/04; B05D-001/12; B23P-006/00; B28B-019/00; C04B-014/06; C04B-018/08; C04B-032/02; E02D-029/10; E04B-001/16; E04C-002/06; E04F-021/12; E21D-011/10; F16L-055/16

File Segment: CPI; EngPI

12/5/20 (Item 20 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

008375018 **Image available**

WPI Acc No: 1990-262019/199035

XRPX Acc No: N90-203020

Lattice girder for supporting freshly cut tunnels - comprises longitudinal members braced transversely and with meander strutting

Patent Assignee: BERNOLD AG (BERN-N)

Inventor: SCHERRER E

Number of Countries: 002 Number of Patents: 002

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| DE 4003525 | A | 19900823 | DE 4003525 | A | 19900206 | 199035 B |
| CH 678214 | A | 19910815 | | | | 199138 |

Priority Applications (No Type Date): CH 89608 A 19890220

Abstract (Basic): DE 4003525 A

The girder is for use in underground construction. It may be used to support newly cut **tunnels** prior to **concrete cladding** , and it also carries wire **mesh** for the **concrete** .

Cross braces (14) are all in one piece with parallel longitudinal members (11,12), and meander strutting (15,16) is welded between inner members (11,12) and the outer member (13).

USE/ADVANTAGE - The girder can be welded together and retain a high resistance to buckling. (4pp Dwg.No.1/2

Title Terms: LATTICE; GIRDER; SUPPORT; FRESH; CUT; **TUNNEL** ; COMPRISE; LONGITUDE; MEMBER; BRACE; TRANSVERSE; MEANDERING; STRUT

Derwent Class: Q49

International Patent Class (Additional): E21D-011/15

File Segment: EngPI

12/5/21 (Item 21 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

008152093 **Image available**
WPI Acc No: 1990-039094/199006
XRPX Acc No: N90-030014

Modular wall surface cladding mesh - comprises rectangular metal
mesh panel with edge connecting formations and reinforcing strips
bridging between adjacent panels in situ.

Patent Assignee: SALZGITTER MASCH & ANLAGEN AG (SALZ)

Inventor: QUANTE H

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| FR 2632682 | A | 19891215 | FR 89915 | A | 19890125 | 199006 B |

Priority Applications (No Type Date): DE 88U7621 U 19880611

Patent Details:

| Patent No | Kind | Lan Pg | Main IPC | Filing Notes |
|------------|------|--------|----------|--------------|
| FR 2632682 | A | 20 | | |

Abstract (Basic): FR 2632682 A

The reinforcing **mesh** panel includes connecting members (12) for attachment to adjacent panels, formed by the end portions of the transverse bars (5) of the **mesh** bent over with a loop configuration. The loops of adjacent panels form a mutually sliding connection resistant to transverse tension.

A number of connecting strips (39) are provided attached to one panel face, including projecting moulded channels (40,41) whose depth is about twice the diameter of the transverse **mesh** bars, to whose positions they correspond. The strips bridge between the faces of two adjacent panels to reinforce the joint.

USE/ADVANTAGE - Wall and roof surface **cladding** for mine tunnels and similar galleries.

5/6

Title Terms: MODULE; WALL; SURFACE; CLAD; **MESH** ; COMPRISE; RECTANGLE;
METAL; **MESH** ; PANEL; EDGE; CONNECT; FORMATION; REINFORCED; STRIP; BRIDGE
; ADJACENT; PANEL; SITU

Derwent Class: Q49

International Patent Class (Additional): E21D-011/15

File Segment: EngPI

12/5/22 (Item 22 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

003866731
WPI Acc No: 1984-012259/198403
XRPX Acc No: N84-009087

Concrete tunnel cladding skin for waterproofing - has skin of
sealant applied to inside of inner layer of steel fibre concrete

Patent Assignee: TUNNEL AUSBAU TECHNIK GMBH (TUNN-N)

Inventor: MAIDL B; SEIZ R

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|----------|----------|
| DE 3224859 | A | 19840105 | DE 3224859 | A | 19820702 | 198403 B |

Priority Applications (No Type Date): DE 3224859 A 19820702

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes
DE 3224859 A 6

Abstract (Basic): DE 3224859 A

The **concrete tunnel** cladding has a skin of sprayed **concrete** joined to the outside **rock**. It provides durable **water - proofing**. The inner layer (14) of this skin (11,14), facing the **tunnel** tube, at least is made of steel fibre sprayed concrete. The **tunnel** -side surface of this has a skin (18) of sealing material applied to it. This is pref. 1-5 cm. thick.

The sprayed concrete skin can consist of an outer skin (11), or ordinary sprayed concrete, containing steel **mesh** reinforcement (12). The inner skin is joined to this by **mesh** reinforcement curves.

1/1

Title Terms: CONCRETE; **TUNNEL** ; CLAD; SKIN; WATERPROOF; SKIN; SEAL; APPLY;
INNER; LAYER; STEEL; FIBRE; CONCRETE

Derwent Class: Q49

International Patent Class (Additional): E21D-011/04

File Segment: EngPI

12/5/23 (Item 23 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

003368718

WPI Acc No: 1982-M6750E/198239

Mine tunnel cladding **warping mat** - is stretched between cables and coated with hard setting substance providing load-bearing shell

Patent Assignee: FERROPLAST GES META (FERR-N)

Inventor: SCHLIMBACH H

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|------|----------|
| DE 3107876 | A | 19820923 | | | | 198239 B |
| DE 3107876 | C | 19821202 | | | | 198249 |

Priority Applications (No Type Date): DE 3107876 A 19810302

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes
DE 3107876 A 16

Abstract (Basic): DE 3107876 A

The revetting system provides **cladding**, esp. for **tunnels** and in mining. The revetting is made up from a series of flexible rollable mats adjoining each other. Mats (4) are formed from largely non-expandable **mesh**, of glass fibre or similar. They are stretched by flexible draw member (9,10) on opposite sides, and they are held in position so as to be virtually self-supporting.

On one side, at least, the mats are sprayed and/or back-filled with rapid-setting material (18), which sets hard to form a load bearing shell in conjunction with the mat. The draw members can be cables, with end loops, pref. arrested on the support system

Title Terms: MINE; **TUNNEL** ; CLAD; WARP; MAT; STRETCH; CABLE; COATING; HARD ; SET; SUBSTANCE; LOAD; BEARING; SHELL

Derwent Class: Q49

International Patent Class (Additional): E21D-011/15

File Segment: EngPI

12/5/24 (Item 24 from file: 350)
DIALOG(R) File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

002351021

WPI Acc No: 1980-F7471C/198027

Underground cavity water resistant cladding - has concrete layer on
mesh type support, leaving open rock fissure

Patent Assignee: RUHRCHEMIE AG (RUHR); RUHRKOHLE AG (RUHL)

Inventor: KOPP B; SCHLUETTER A

Number of Countries: 008 Number of Patents: 005

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|------|----------|
| DE 2853279 | A | 19800626 | | | | 198027 B |
| EP 12823 | A | 19800709 | | | | 198029 |
| EP 12823 | B | 19810916 | | | | 198139 |
| DE 2960850 | G | 19811203 | | | | 198150 |
| AT 7907801 | A | 19820415 | | | | 198218 |

Priority Applications (No Type Date): DE 2853279 A 19781209

Cited Patents: CH 441417; CH 531625; CH 593416; DE 1534657; DE 1609328; DE
1759999; DE 1784259; DE 2307090; DE 2432648; DE 2532664; DE 2637996; DE
2656933; DE 2705432; DE 2724664; DE 2724686; DE 874317; FR 1583561

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-----------|------|-----|----|----------|--------------|
|-----------|------|-----|----|----------|--------------|

| | | | | | |
|----------|---|---|--|--|--|
| EP 12823 | A | G | | | |
|----------|---|---|--|--|--|

Designated States (Regional): BE CH DE FR GB NL SE

| | | | | | |
|----------|---|---|--|--|--|
| EP 12823 | B | G | | | |
|----------|---|---|--|--|--|

Designated States (Regional): BE CH DE FR GB NL SE

Abstract (Basic): DE 2853279 A

The system is used for consolidating and finishing spaces below
ground, such as **tunnels**, galleries and shafts. It is esp. applicable
with a waterproofing layer in front of a concrete support layer, and
gives protection where water is liable to settle.

A form and support unit is introduced, and a layer of concrete is
applied to this in the fissured rock, leaving a cleft open. Sheathing
may be used, pref. impervious to water, with textile coating or it can
be in the form of wire **mesh**. It may be supported on rock protrusions.
Less work is involved, and less concrete needs to be sprayed on than is
the case in a number of other methods.

Title Terms: UNDERGROUND; CAVITY; WATER; RESISTANCE; CLAD; CONCRETE; LAYER;
MESH; TYPE; SUPPORT; LEAVE; OPEN; ROCK; FISSURE

Derwent Class: Q49

International Patent Class (Additional): E21D-005/04; E21D-011/38

File Segment: EngPI

12/5/25 (Item 25 from file: 350)
DIALOG(R) File 350:Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

002350618

WPI Acc No: 1980-F7068C/198026

Underground ferroconcrete reservoir slab - has waterproof steel cladding
and hemispherical bar anchors staggered on surface to increase corrosion
and fire resistance

Patent Assignee: KUIB ENG-CONS INST (KBEN-R)
Inventor: AIBULATOV M I; ZYBIN P A
Number of Countries: 001 Number of Patents: 001
Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-----------|------|----------|-------------|------|------|----------|
| SU 697660 | A | 19791120 | | | | 198026 B |

Priority Applications (No Type Date): SU 2597156 A 19780329

Abstract (Basic): SU 697660 A

Reinforced **concrete** slab can be used for underground reservoirs and **tunnels**, and has a metal sheet, **waterproof cladding** (1) with the horizontal and vertical anchors (2) and which form hemispherical shaper (4) staggered on the slabs surface.

The concrete slab is reinforced in the normal way and due to the varying distance between the anchors it has different strength vertically from top to bottom to allow for increasing hoop stresses and horizontally from end to end to allow for the increasing bending moments.

The concrete transfers axial forces to the metal cladding which in turn passes these forces on the hemispherical anchors. The bending moments are transferred to the cladding via the anchors

Title Terms: UNDERGROUND; FERROCONCRETE; RESERVOIR; SLAB; WATERPROOF; STEEL ; CLAD; HEMISPHERICAL; BAR; ANCHOR; STAGGER; SURFACE; INCREASE; CORROSION ; FIRE; RESISTANCE

Derwent Class: Q43

International Patent Class (Additional): E04B-001/62

File Segment: EngPI

12/5/26 (Item 26 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

002330719

WPI Acc No: 1980-D7157C/198017

Monolithically pressed concrete tunnel lining shield - has sliding support unit following swivelling shaping unit with surface contouring component

Patent Assignee: CHODOS V (CHOD-I); GLAVTONNEL METROSTR (GLAV-R); KHODOSH V A (KHOD-I); METROGIPROTRANS DES (METR-R)

Inventor: CHODOSCH V A; IVANOV V A; LUGOVZOV A S

Number of Countries: 004 Number of Patents: 005

Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|------|----------|
| DE 2844953 | A | 19800417 | | | | 198017 B |
| FR 2441717 | A | 19800718 | | | | 198036 |
| US 4222681 | A | 19800916 | | | | 198040 |
| CS 7902296 | A | 19801230 | | | | 198111 |
| DE 2844953 | C | 19830105 | | | | 198302 |

Priority Applications (No Type Date): DE 2844953 A 19781016

Abstract (Basic): DE 2844953 A

The housing contains a mechanism for absorbing the drive return force, together with a smoothing head for shaping the face of the cladding, on the shield for constructing tunnels. The shaping device has a contouring component (6) on the same axis in the housing (1), able to swivel with the housing during pressing, and then to be offset along the shield's longitudinal axis, on completion of a section.

A rear support component (7) is displaceable along the longitudinal

axis of the **cladding** (3). This prevents fissure formation in **concrete**, and ensures **waterproof tunnel cladding**.
Title Terms: MONOLITHIC; PRESS; CONCRETE; TUNNEL; LINING; SHIELD; SLIDE; SUPPORT; UNIT; FOLLOW; SWIVEL; SHAPE; UNIT; SURFACE; CONTOUR; COMPONENT
Derwent Class: Q41; Q49
International Patent Class (Additional): E01G-003/04; E21D-009/06; E21D-011/10
File Segment: EngPI

12/5/27 (Item 27 from file: 350)
DIALOG(R) File 350: Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

001916867
WPI Acc No: 1978-E6118A/197824
Mine gallery cladding mesh mat connection - has longitudinal wires hooked over cross wire to slide sideways for final stop position
Patent Assignee: THYSSEN IND AG (THYS)
Inventor: HEUSNER W
Number of Countries: 002 Number of Patents: 002
Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|------------|------|----------|-------------|------|------|----------|
| DE 2703241 | B | 19780608 | | | | 197824 B |
| GB 1595420 | A | 19810812 | | | | 198133 |

Priority Applications (No Type Date): DE 2703241 A 19770127

Abstract (Basic): DE 2703241 B

Steel **mesh** mats supported on channel frames and used for **tunnel** linings, are hooked together near the position of a channel frame. Each mat has rectangular **meshes** made by welding longitudinal wires (4, 14) to cross wires. The ends of the longitudinal wires (14) are bent over (8) to hook onto the last cross wire (5a) of the next mat.

At these points, the longitudinal wires (4) of the latter are bent outwards at an angle (alpha) between 45 deg. and 90 deg.

Part of this bent portion (6) is welded to the cross wire (5a). When the bent ends (8) have been hooked over the cross wire, the mat is slid along the wire (5a) to rest against the angled part (6). These bent ends (8) have a final extension (11) which is parallel to the cross wires (5a).

Title Terms: MINE; GALLERY; CLAD; **MESH**; MAT; CONNECT; LONGITUDE; WIRE; HOOK; CROSS; WIRE; SLIDE; SIDeways; FINAL; STOP; POSITION
Derwent Class: Q49
International Patent Class (Additional): E21D-011/15
File Segment: EngPI

12/5/28 (Item 28 from file: 350)
DIALOG(R) File 350: Derwent WPIX
(c) 2003 Thomson Derwent. All rts. reserv.

000905167
WPI Acc No: 1972-65225T/197241 /
Sealed cladding for concrete - of reinforced polyester resin over bituminised felt
Patent Assignee: CLAISSE A (CLA -I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

| Patent No | Kind | Date | Applicat No | Kind | Date | Week |
|-----------|------|------|-------------|------|------|------|
|-----------|------|------|-------------|------|------|------|

FR 2112620 A

197241 B

Priority Applications (No Type Date): FR 7039471 A 19701103

Abstract (Basic): FR 2112620 A

Sealing concrete surfaces with a lyer of bituminised felt, tarred paper of similar covered with a (coloured) catalysed polyester resin system incorporating a layer of resin impregnated glass fibre or a metal **mesh** or cloth. Pref. the cover is assembled from slabs bonded together by a reinforced polyester resin dressing.

For sealing horizontal or vertical concrete surfaces of buildings, reservoirs, **tunnels**, basements, etc. by heating the bituminous or tarred substrate to stick it onto the concrete surface.

Title Terms: SEAL; CLAD; CONCRETE; REINFORCED; POLYESTER; RESIN; BITUMEN; FELT

Derwent Class: A23; A93; Q45

International Patent Class (Additional): E04D-007/00

File Segment: CPI; EngPI

| Set | Items | Description |
|-----|-------|--|
| S1 | 13334 | CLADDING? |
| S2 | 28915 | TUNNEL? OR CAVE? ? |
| S3 | 90155 | MESH? OR WELDMESH? |
| S4 | 76090 | CONCRETE? OR ROCK? ? OR STONE? ? |
| S5 | 18468 | WATERPROOF? OR WATERTIGHT? OR WATER() (PROOF? OR TIGHT?) |
| S6 | 110 | S1(35N)S2 |
| S7 | 2 | S6(S)S3 |
| S8 | 6 | S6(S)S4 |
| S9 | 1 | S6(S)S5 |
| S10 | 7 | S7:S9 |

? show files

File 348:EUROPEAN PATENTS 1978-2003/Mar W04

(c) 2003 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20030327,UT=20030320

(c) 2003 WIPO/Univentio

10/3,K/1 (Item 1 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2003 European Patent Office. All rts. reserv.

01133972

Polymer coated woven glass fabric and process for its production
Kunststoffbeschichtetes Glas-Gittergewebe und Verfahren zu seiner
Herstellung

Tissus de verre textile revetu avec un polymere et procede de production
PATENT ASSIGNEE:

Vitrulan Textilglas GmbH, (2781890), Bernecker Strasse 8, 95509
Marktschorgast, (DE), (Applicant designated States: all)

INVENTOR:

Moll, Andre, Dr., Hans-Schaefer-Strasse 1, 95448 Bayreuth, (DE)

LEGAL REPRESENTATIVE:

Matschkur, Lindner Blaumeier Patent- und Rechtsanwälte (100486),
Dr.-Kurt-Schumacher-Strasse 23, 90402 Nurnberg, (DE)

PATENT (CC, No, Kind, Date): EP 990626 A1 000405 (Basic)

APPLICATION (CC, No, Date): EP 99112230 990625;

PRIORITY (CC, No, Date): DE 19844387 980928

DESIGNATED STATES: AT; CH; DE; ES; IT; LI

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: C03C-025/26

TRANSLATED ABSTRACT WORD COUNT: 321

ABSTRACT WORD COUNT: 16

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): German; German; German

FULLTEXT AVAILABILITY:

| Available Text | Language | Update | Word Count |
|------------------------------------|----------|--------|------------|
| CLAIMS A | (German) | 200014 | 463 |
| SPEC A | (German) | 200014 | 1334 |
| Total word count - document A | | | 1797 |
| Total word count - document B | | | 0 |
| Total word count - documents A + B | | | 1797 |

...ABSTRACT a paste over the woven netting, with a scraper to remove any surplus cladding. The mesh openings can be cleared by an air blower (8), and preferably with hot air (9). The plastics **cladding** can also be applied to the woven netting as a powder, such as by an electronic adhesion coating process, to be melted in a furnace shaft or a heated **tunnel**. The coated netting is passed through a cooling stretch (10). The glass fiber material can...

10/3,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
(c) 2003 European Patent Office. All rts. reserv.

00484305

Reinforced earth blast resistant structures and method of construction thereof.

Armierter sprengsicherer Erdbau und Konstruktionsverfahren damit.

Constructions armees dans la terre et resistantes aux explosions et procede de construction.

PATENT ASSIGNEE:

Negri, Yermiyahu, (1375210), 4 Recanati Street, Tel Aviv, (IL),
(applicant designated states:
AT;BE;CH;DE;DK;ES;FR;GB;GR;IT;LI;LU;NL;SE)

INVENTOR:

Negri, Yermiyahu, 4 Recanati Street, Tel Aviv, (IL)

LEGAL REPRESENTATIVE:

Driver, Virginia Rozanne et al (58902), Page White & Farrer 54 Doughty Street, London WC1N 2LS, (GB)

PATENT (CC, No, Kind, Date): EP 460891 A2 911211 (Basic)
EP 460891 A3 920122
EP 460891 B1 950809

APPLICATION (CC, No, Date): EP 91304995 910603;

PRIORITY (CC, No, Date): IL 94604 900604

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FR; GB; GR; IT; LI; LU; NL; SE

INTERNATIONAL PATENT CLASS: E02D-003/08; E21D-009/00; E21D-011/08;

ABSTRACT WORD COUNT: 53

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

| Available Text | Language | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A | (English) | EPABF1 | 219 |
| CLAIMS B | (English) | EPAB95 | 429 |
| CLAIMS B | (German) | EPAB95 | 411 |
| CLAIMS B | (French) | EPAB95 | 462 |
| SPEC A | (English) | EPABF1 | 1980 |
| SPEC B | (English) | EPAB95 | 2237 |
| Total word count - document A | | | 2199 |
| Total word count - document B | | | 3539 |
| Total word count - documents A + B | | | 5738 |

...SPECIFICATION other.

Furthermore, it was discovered that concrete roof structures supported by reinforced earth concrete slab **cladding** were less prone to **cave** in when subjected to both internal and external blast forces.
BRIEF DESCRIPTION OF THE DRAWINGS...

...SPECIFICATION other.

Furthermore, it was discovered that concrete roof structures supported by reinforced earth concrete slab **cladding** were less prone to **cave** in when subjected to both internal and external blast forces.
BRIEF DESCRIPTION OF THE DRAWINGS...

10/3,K/3 (Item 3 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2003 European Patent Office. All rts. reserv.

00443201

FIBRES AND MATERIAL COMPRISING SAME.

FASERN UND DIESE FASERN ENTHALTENDES MATERIAL.

FIBRES ET MATIERE CONTENANT CES FIBRES.

PATENT ASSIGNEE:

DANAKLON A/S, (1021140), Engdraget 22, DK-6800 Varde, (DK), (applicant designated states: AT;BE;CH;DE;ES;FR;GB;IT;LI;LU;NL;SE)

INVENTOR:

HANSEN, Anders, Staf, Vestparken 17, DK-6840 Oksbol, (DK)

DAVIES, Derek, Clifton Hall Ashbourne, Derbyshire DE6 2GL, (GB)

LEGAL REPRESENTATIVE:

Plougmann, Ole et al (61271), c/o Plougmann & Vingtoft A/S, Sankt Annae Plads 11, P.O. Box 3007, DK-1021 Copenhagen K, (DK)

PATENT (CC, No, Kind, Date): EP 448577 A1 911002 (Basic)
EP 448577 B1 931103
WO 9006902 900628

APPLICATION (CC, No, Date): EP 90900087 891214; WO 89DK295 891214

PRIORITY (CC, No, Date): DK 886956 881214
DESIGNATED STATES: AT; BE; CH; DE; ES; FR; GB; IT; LI; LU; NL; SE
INTERNATIONAL PATENT CLASS: C04B-016/06; C04B-020/10;
NOTE:

No A-document published by EPO
LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

| Available Text | Language | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B | (English) | EPBBF1 | 840 |
| CLAIMS B | (German) | EPBBF1 | 836 |
| CLAIMS B | (French) | EPBBF1 | 1019 |
| SPEC B | (English) | EPBBF1 | 7617 |
| Total word count - document A | | | 0 |
| Total word count - document B | | | 10312 |
| Total word count - documents A + B | | | 10312 |

...SPECIFICATION invention are envisaged as being of particular importance in all types of mass on-site **concrete** , such as for pavements, foundations, roadways, floors, bridge decks, **concrete** buildings, structural **concrete** , retaining walls, water retaining structures and for sea defence and military purposes, as well as in pre-cast **concrete** , such as for **cladding** panels, floors, joists and beams, ornamental and architectural products, prefabricated structures, pipes, **tunnel** linings, etc.

The invention will be further illustrated by the following examples.

EXAMPLE 1

Preparation...

10/3,K/4 (Item 1 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.

00542114 **Image available**

WATERPROOF CLADDING

REVEITEMENT IMPERMEABLE

Patent Applicant/Assignee:

MBT HOLDING AG,
BRANDENBERGER Rolf,
GARSHOL Knut Finn,
MELBYE Tom Arild,
SCHUBERT Peter Alexander,

Inventor(s):

BRANDENBERGER Rolf,
GARSHOL Knut Finn,
MELBYE Tom Arild,
SCHUBERT Peter Alexander,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200005487 A1 20000203 (WO 0005487)

Application: WO 99EP4407 19990624 (PCT/WO EP9904407)

Priority Application: GB 9815685 19980720

Designated States: AU JP NO SG US AT BE CH CY DE DK ES FI FR GB GR IE IT LU
MC NL PT SE

Publication Language: English

Fulltext Word Count: 2509

Fulltext Availability:

Detailed Description

English Abstract

A **cladding** for a partially-overhanging substrate, such as a **tunnel** wall which comprises, in sequence from the **tunnel** wall, a drainage means, a sprayed polymeric membrane and a final layer of **concrete**. The **cladding** gives an effective **cladding** in conditions where the **tunnel** walls suffer from running water at the time of **cladding**, is easier to apply and requires less material.

Detailed Description

WATERPROOF **CLADDING**

This invention relates to the **cladding** of partially-overhanging substrates.

By "partially-overhanging substrates" is meant simply a substrate part of which overhangs.

One example is a **tunnel** bored in **rock**, which has an overhanging roof and nonoverhanging walls, but the substrate can equally well be a construction, for example, an arch of **concrete**, brick, **stone** or other material.

The exposed rock surfaces of **tunnels** often require **cladding**, this **cladding** generally being **concrete**, which may be sprayed (so-called "shotcrete"), cast in formwork or placed in prefabricated sections...

10/3,K/5 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.

00244032 **Image available**

FIXING MEANS

DISPOSITIF DE FIXATION

Patent Applicant/Assignee:
SOUTHERN SPRINGS LIMITED,
BANKS-FEAR David,

Inventor(s):

BANKS-FEAR David,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9318312 A1 19930916

Application: WO 93GB497 19930310 (PCT/WO GB9300497)

Priority Application: GB 925467 19920311

Designated States: AT AU BB BG BR CA CH CZ DE DK ES FI GB HU JP KP KR LK LU
MG MN MW NL NO NZ PL PT RO RU SD SE SK UA US AT BE CH DE DK ES FR GB GR
IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR SN TD TG

Publication Language: English

Fulltext Word Count: 2444

Fulltext Availability:

Detailed Description

Detailed Description

... assembly

and fixing of fire resisting barriers, bulkheads and linings to contained spaces, such as **tunnels** or inhabited buildings, but has a wider application as a general means of securing screw thread type fixings in **concrete**, brick and masonry.

A number of decorative and fire resistant linings and **claddings** have been proposed or are known, all of which make substantial use of screw thread type fixings to

support such claddings from a structural substrate. The substrate usually comprises **concrete**, reinforced or unreinforced, brick or **stone** masonry, all incombustible materials in themselves, but which, being hard, do not readily take a...

10/3,K/6 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.

00194864

FERROCEMENT COMPOSITION, METHOD OF FORMING OBJECTS THEREFROM AND APPARATUS FOR USE IN SUCH A METHOD
COMPOSITION A BASE DE FERROCIMENT, PROCEDE DE COULAGE D'OBJETS COMPOSES DE CE MATERIAU ET INSTALLATION UTILISEE

Patent Applicant/Assignee:
MONK CONSTRUCTION LIMITED,
VENN Anthony Bryan,

Inventor(s):

VENN Anthony Bryan,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9112215 A2 19910822

Application: WO 91GB208 19910212 (PCT/WO GB9100208)

Priority Application: GB 903086 19900212; GB 903125 19900212

Designated States: AT AU BB BE BF BG BJ BR CA CF CG CH CM DE DK ES FI FR GA
GB GR HU IT JP KP KR LK LU MC MG ML MR MW NL NO PL RO SD SE SN SU TD TG

US

Publication Language: English

Fulltext Word Count: 4761

Fulltext Availability:
Detailed Description

Detailed Description

... aqueous cementitious composition for use therewith.

Ferrocement is one of the oldest forms of reinforced **concrete**. It- basically consists of cement reinforced with steel **mesh** formed from closely spaced wires which typically range in diameter from about 0.4 mm...

...mm, e.g. about 12.5 mm or about 25 mm. Compared with conventionally reinforced **concrete** ferrocement generally has inherently better properties of toughness and crack resistance. These properties, inter alia...

...by way of temporary or permanent repair. They also enable ferrocement to be used for **cladding** or recladding buildings, other civil engineering structures, reservoirs, hard sea defence walls, **tunnels** and the like. Ferrocement can also be used for new construction and for repair work...

10/3,K/7 (Item 4 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2003 WIPO/Univentio. All rts. reserv.

00173446

FIBRES AND MATERIAL COMPRISING SAME
FIBRES ET MATIERE CONTENANT CES FIBRES

Patent Applicant/Assignee:

DANAKLON A S,
HANSEN Anders Staf,
DAVIES Derek,

Inventor(s):

HANSEN Anders Staf,
DAVIES Derek,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9006902 A1 19900628

Application: WO 89DK295 19891214 (PCT/WO DK8900295)

Priority Application: DK 695688 19881214

Designated States: AT AU BE CH DE DK ES FI FR GB IT JP KR LU NL NO SE SU US

Publication Language: English

Fulltext Word Count: 9824

Fulltext Availability:

Detailed Description

Detailed Description

... invention are envisaged as being
of particular importance in all types of mass on-site **concrete**, such
as for pavements, foundations, roadways, floors, bridge decks, **concrete**
buildings, structural **concrete**, retaining walls, water retaining
structures and for sea defence and military purposes, as well
as in pre-cast **concrete**, such as for **cladding** panels, floors, joists
and beams, ornamental and architectural products, prefabricated
structures, pipes, **tunnel** linings, etc.

The invention will be further illustrated by the following non-limiting
examples.

EXAMPLE...